TEST REPORT

2025061406

Customer	mAG Terapia Izabela Wudarczyk Dębogóra 33A 89-240 Dębogóra	**Date of production**	-
		Expiry date	11.2026
		Sample reception date	31.05.2025
		Start of analysis	02.06.2025
		End of analysis	11.06.2025
Sample name	Dietary suplement mAG Magnez Plus	**Test report date**	14.06.2025
Batch	488224	**Analysis ID**	J457B

Authorized by:

CBSF Sp. z o.o.
UL. ŚNIARDWY 8 / 76, 02-695 WARSZAWA
REGON 524921757 NIP 1133092131
KRS 0001029031

Prezes Zarządu

Scope of analysis

Verification of the identity of magnesium citrate and testing of magnesium content. Determination of the magnesium release profile from the preparation in simulated gastric conditions.

Summary of analysis

The studies conducted confirmed that the magnesium ion content in the capsule aligns with the manufacturer's declaration.

The release profile showed that magnesium is completely released within 45 minutes, indicating good bioavailability. No sudden spikes in concentration were observed, which supports effective absorption.

Furthermore, FTIR analysis confirmed that the active substance is pure magnesium citrate, with no impurities detected.

Initial evaluation of the sample

Color: Off white

Smell: Delicate smell, typical of dietary supplements containing added plant extracts

Magnesium content analysis

Complexometric titration (NA)[1]

Result:

Mg^{2+} = 98 mg/capsule

Declared content on the packaging = 100 mg/capsule

Difference from declared value = - 2 mg [-2%]

Comments:

In Poland, under the Food and Nutrition Safety Act of 25 August 2006, along with the European Commission guidelines on quantitative nutrient tolerances, the permitted variations in the mineral content, such as magnesium, in dietary supplements range from -20% to +45% of the value declared on the label.

The content of magnesium ions in the capsule is consistent with the declared content on the product packaging. In this case, the magnesium content in the tested capsule was found to be slightly lower than what was declared on the packaging, by 2 mg. This difference is within the acceptable range and is likely due to variations in research methods and measurement uncertainties.

Overall, the magnesium content not only falls within the permissible tolerance limits but is also very close to the declared value. **This further indicates the high quality of the raw materials used and the precision of the production process.**

Confirmation of identity and chelation degree

FT-IR spectroscopy (NA)[1]

Result:

Spectral analysis showed that:

1) The identity of magnesium citrate was confirmed.

2) The absence of additional bands indicates the absence of impurities.

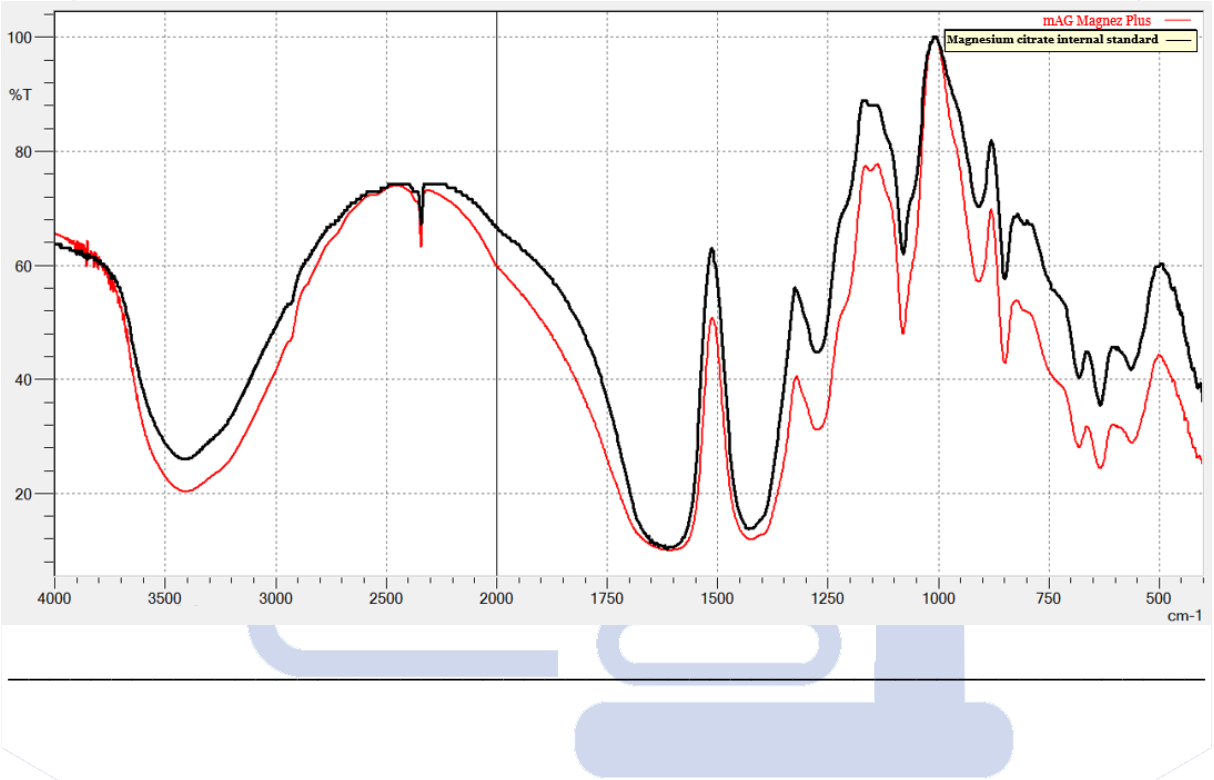
Comments:

Fourier transform infrared spectroscopy (FTIR) is a widely used analytical technique that enables the identification and verification of both organic and inorganic compounds based on their unique absorption spectra, known as characteristic bands, within the infrared radiation range. This method relies on the absorption of IR radiation by molecules at specific wavelengths, which correspond to the vibrations of specific chemical bonds within the molecules. Each chemical substance produces a distinctive pattern of absorption bands, allowing for the clear identification of the substance present in the sample.

In a recent study, FTIR spectroscopy was employed to assess the quality and purity of magnesium citrate contained in the mAG Magnez Plus supplement. The spectrum obtained

from the tested sample was compared with that of a reference (standard) substance. **The analysis demonstrated complete agreement between the absorption bands of the tested sample and the reference standard, confirming that the analyzed compound is indeed magnesium citrate.**

Furthermore, no additional bands were detected in the spectrum that would indicate the presence of potential organic or inorganic impurities. The absence of foreign signals suggests a high degree of purity of the active substance used in the product. **This indicates that there are no significant amounts of impurities in the sample that could compromise the quality, safety, or effectiveness of the preparation.**



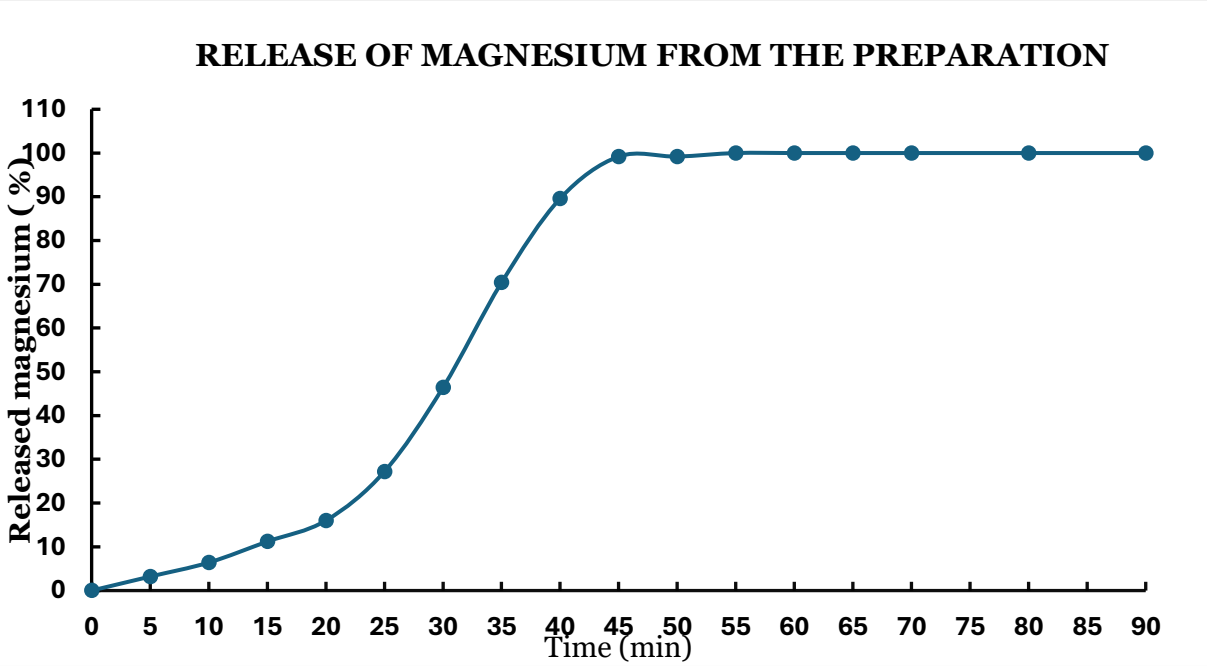
Release of the active substance under simulated physiological conditions

Release methodology in accordance with the requirements of the European Pharmacopoeia (NA)[1]

Result:

The release profile of the active substance from the capsule demonstrates optimal characteristics for this type of formulation, considering both the nature of the supplemented ingredient and the pharmaceutical form (hard capsule). There are no abrupt increases in concentration that could hinder absorption by temporarily saturating the magnesium ion

transporters in the digestive tract. Additionally, the entire release process occurs within 45 minutes, enhancing the likelihood of proper absorption of the preparation whether taken on an empty stomach or during a meal.



Comments:

The release profile is a study that illustrates how the active substance in a drug or dietary supplement is released over time. This parameter is crucial as it affects the therapeutic efficacy, safety of use, and bioavailability of the active ingredient.

For this preparation, the magnesium release profile was evaluated under conditions that simulate the stomach environment (e.g., pH ≈ 1.2 and a temperature of 37°C). One capsule was tested in vitro, adhering to established pharmacopoeia standards.

The study demonstrated that after just 45 minutes, all the magnesium contained in the formulation had been released into the test environment. **This indicates that the mAG Magnez Plus dietary supplement guarantees a complete and rapid release of the active ingredient,** which is particularly beneficial when the supplement is taken on an empty stomach. Under these conditions, the stomach contents quickly progress to the duodenum; however, thanks to the carefully designed release mechanism, the efficiency of magnesium absorption is not compromised.

Additionally, it was observed that after approximately 25 minutes, the release rate accelerated due to the degradation of the capsule shell. This marks the transition from a slower dissolution phase to a more rapid release of the active substance. **Notably, there was no sudden spike in concentration that could lead to reduced absorption caused by the phenomenon of magnesium ion supersaturation in the intestinal epithelium.** Maintaining a moderate and gradual release facilitates more effective utilization of the administered dose while minimizing the risk of gastrointestinal side effects, such as osmotic diarrhea.

NA[1]-non accredited method

END OF REPORT